

Many people do not know the derivation of the word "fad." F. A. D. means for a day.

There are 71,000 more women than men in the state of Massachusetts, and this excess is all in persons over fourteen.

The Berlin town council has decided to appoint a municipal "hydrologist," whose duty it shall be to supervise the water supply of the city.

A physician has invented a combination of the vitascope and the microscope that reveals the presence of deadly microbes or bacilli in the blood and will assist the prevention of disease.

At Osage, Kansas, R. H. Lyons turned a waste pool on his farm into a fish pond ten years ago. Now he has a chain of fish ponds worth \$15,000 on the place, all stocked from the waste pool.

German capitalists are said to be taking advantage of the willingness of Cuban property holders to dispose of their estates at a sacrifice, and are making large purchases of sugar, tobacco and coffee lands.

It has often been stated that the grave of Jenny Lind, the "Swedish Nightingale," has been neglected and is not even marked by a slab. This is not true. A handsome cross marks her last resting place on Malvern hills, in England.

Verestchagin, the Russian battle painter, will be the first recipient of the Nobel prize, given for "the propagation of pacific ideas," it is said, as his pictures have brought out the true horrors of war. Kaiser Wilhelm calls them "the best assurance against war."

The state supreme court of California has affirmed the judgment of guilty of murder in the first degree found against J. E. Banks, who killed Mrs. Harriet Stiles and J. B. Borden at Ocean Side, San Diego county, on September 6, 1895. The case was appealed on the grounds that the evidence was circumstantial and that the lower court erred in refusing to allow a hypnotist, B. A. Stevens, to testify that he hypnotized the defendant after the murder and that the latter denied the crime when under the hypnotic spell. Commissioner Searles, whose opinion was affirmed by the court, said that the law did not recognize hypnotism. In passing on the case the supreme court agreed, but Justice McFarland took occasion to say that he did not quite agree as to the attitude of the law toward hypnotism. It could not be considered in this case, he said, though it might be in others.

The New York Times says: The tremendous speed of the little Welsh wheelman, Michael, lends some confirmation to the theory that the combination of light weight and a strong pair of legs ought to produce a fast rider. Michael weighs 100 pounds, and his leg muscles are like steel. He rides easily, but his great speed is made easier by his trick of riding close up to the quartet that "paces" him. A big machine with four riders necessarily overcomes the resistance of the air, and riding at their heels the little racer has something like a vacuum in front of him and air in swift, eddying, and favorable motion on both sides. His thirty miles in 59 minutes and 44 seconds is good railroad speed, while his feat of making thirty-two miles, every one of which was ridden in less than two minutes, leaves the trotting horse forever outclassed. The dynamics of high speed with the wheel are only just coming within the comprehension of the racing cyclists, as is proved by the quick shifting of the honors of the record mile. Recently Gardner rode a mile in 1.39 2-5 at Philadelphia. McDuffee, at the Charles River track August 14, made the mile in 1.38 1-5, which was the world's record until the 19th, when Platt-Betts rode a mile in 1.37 3-5 at the Crystal Palace track, London. Already the bicycle mile record is within a trifle over two seconds of Salvador's running mile in 1.35 1-2. That record will surely be beaten. It will then be a demonstrated possibility for man to transport himself by his own power faster than the swiftest horse can carry him.

PLACER MINING IN THE KLONDIKE.

A Full Description of the Way the Precious Dust is Taken Out of the Earth.

So far all the mining that has been done in the Klondike country has been what is known as placer mining. This is the simplest and oldest form of mining, and is usually adopted in new gold fields. In its crudest form, placer mining is simply the picking up of a handful of dirt from the bed of a stream where gold is supposed to exist, the washing away of the dirt and pebbles and the gathering of the gold, which, because of its weight, sinks to the bottom of the pan.

For example, let us follow a prospector on some stream in our Western gold fields, where the complication of eternally frozen ground does not enter into the question. After traveling perhaps many weary days he comes on a stream coming down some mountain gorge that looks "likely," as he says, to his practiced eye. He stops and examines the pebbles on the bottom, and finds a good many of them are of quartz.

This, although not in itself an indication of gold, is a good sign, so the prospector scrapes away the earth and stones at the bottom of the stream to the depth of a foot or so, and then



TWO TYPICAL KLONDIKERS IN FULL DRESS

takes out a panful of dirt. The pan, by the way, is nothing but a broad, shallow dish of strong sheet iron.

Having done this, he puts in enough water to make the panful semi-liquid, and then gives it a rapid, twirling motion. This causes the gold, if there is any, to sink to the bottom of the pan. Then the gravel and sand are carefully washed out until only the heavy residue remains in the pan. This residue is carefully examined to see how many "colors" there are in it. "Colors" is the term miners give to the particles

mercury. The gold, when it touches the mercury, forms an amalgam. After a quantity of gold has been put in the barrel the mercury is taken out, squeezed through a buckskin bag, and what remains in the bag is heated, either in a retort or in some other way, until what mercury is left is vaporized, and the gold remains, nearly pure.

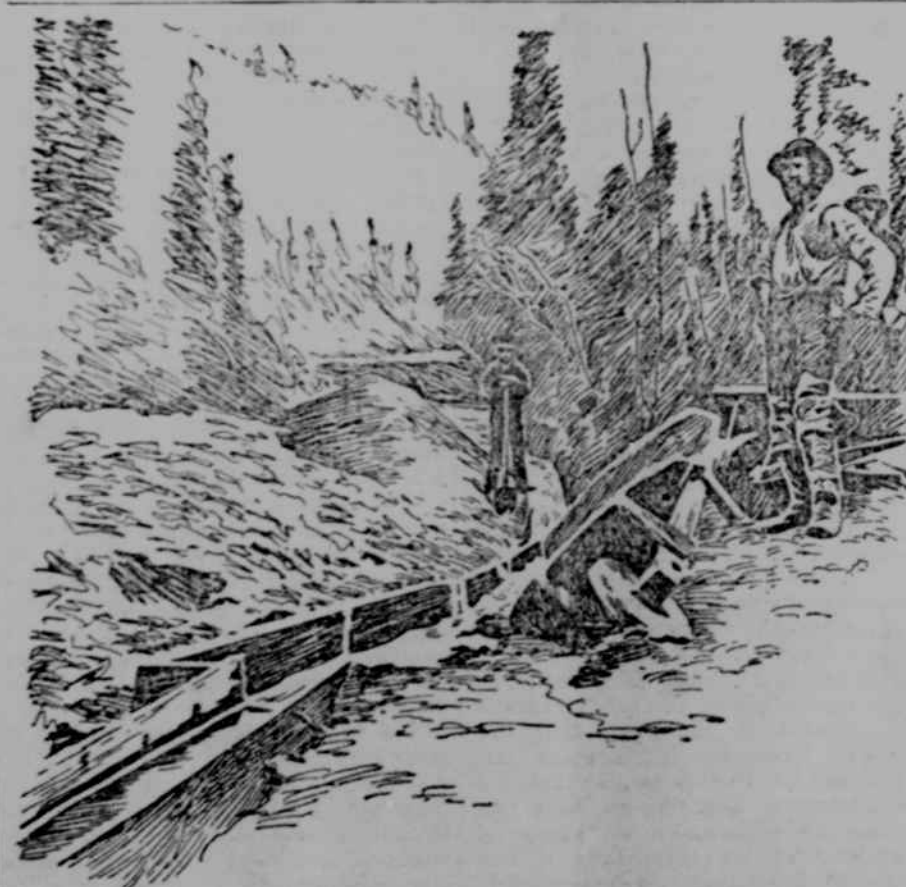
This is placer mining in its most primitive form, but it is slow work, and long ago various methods were devised to shorten it where it was to be carried on to any extent.

The first step in advance in placer mining is the use of the "rocker." The rocker looks like one of the old cradles we find once in a while in the attic of some old house up in the country. It is a box about three feet long and two feet wide, placed on rockers just like a cradle. A part of the box is covered with a piece of heavy sheet iron, placed a few inches below the top and punched full of holes about a quarter of an inch in diameter. The bottom of the rest of the box slants towards the lower end and is covered with a piece of woolen blanket. Towards the end of the box slats are placed across, with mercury behind them, to catch what gold gets by above.

The miner sets up his rocker near the stream and piles his gravel on the sheet iron, keeping it wet all the while and keeping the rocker in motion. The fine gold and sand sift through to the blanket, while nuggets of any size remain on the iron. The finer gold settles on the blanket and the dust is caught by the mercury behind the slats. The blanket is frequently rinsed in a barrel of water with mercury at the bottom, and this mercury, together with that behind the slats, is "roasted" as in the other method.

But even this method is not used when "sluicing" is possible, as it is when the stream has sufficient fall. In sluicing a number of long boxes are made which fit into each other like a stovepipe. Across these boxes slats are placed with mercury behind them, or sometimes the bottoms are bored full of holes and mercury placed underneath. A long line of these boxes is placed at a considerable slant and the miner shovels his gravel in at the upper end, lets the water run down the sluice and the gold, if in nuggets, sinks and is held by the slats, or, if fine, is caught by the mercury. Three times as much gold can be washed out in this way as by a rocker, because three times as much dirt can be washed. And after the boxes are all done with they are burned and the ashes washed for the gold held by the wood.

These are the various methods of placer mining and thus they are practiced in the Klondike region, hampered



SLUICING AT A RICH CLAIM IN THE KLONDIKE.

(From this mine \$8000 was taken from a piece of ground 24 by 14 feet in plane dimensions. It is officially designated as "No. 2, Below," Bonanza.)

or nuggets, if there are any, of gold that can be seen at the bottom of the pan.

But gold is not the only thing that sinks to the bottom of the pan. Almost always there is found with gold a fine black sand, which is magnetic iron ore, and from this the gold has to be separated. Of course, if the gold is in nuggets of any size this is a simple process, but if it is in fine dust, as is generally the case, the mercury process is employed.

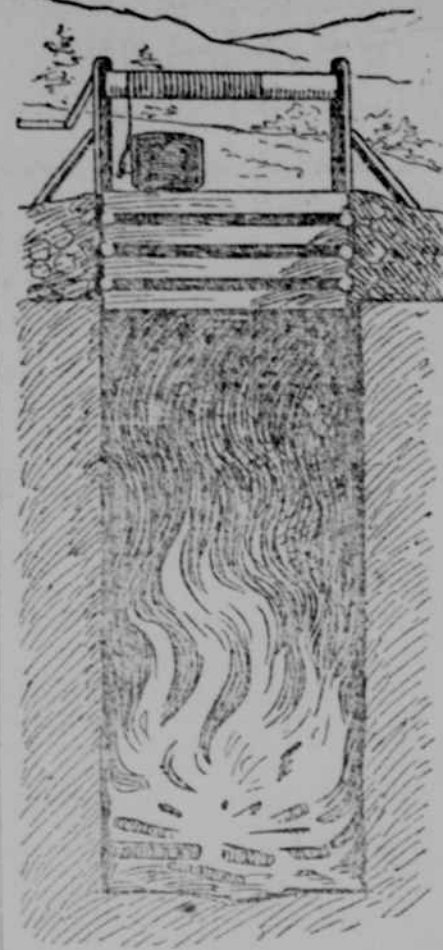
In this the residue in the pan is placed in a barrel with some water and

only by the natural conditions of the country. Let us now look for a moment at what these conditions compel the Klondike miner to do.

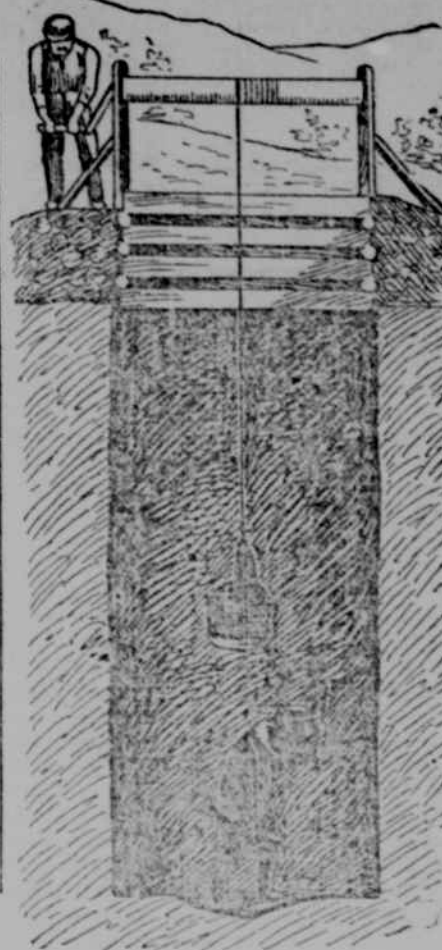
Let us suppose the gold-hunter has passed through the difficult journey and arrived at the gold fields. He first goes out and prospects until he finds a claim where the "colors" in his pan encourage him to locate. If he should happen to be early on a new field he would probably stake out a claim next to one that was already paying in the hope that his would pay, too. A Klondike claim is supposed to be laid

out 500 feet long parallel with the general direction of the creek, and 666 feet crosswise, the idea being to give each location the width of the gravel from rim rock to rim rock. Most of the creeks up there have a slight fall with wide bottoms. Bedrock is anywhere from four to twenty feet below the surface and pay dirt is apt to extend clear down to bedrock. Of course, the great difficulty that the miner has to contend with is the

placer mining in the Klondike region has been coarse, and many of the nuggets have been found attached to quartz. This, according to experts, indicates that the veins from which it originates are not far distant from the alluvial deposits. Placer gold is liberated by the erosive agencies of ice, rocks and water from the rock matrix in which it is held. It is tougher than the rock which holds it and resists abrasion better. Drawing an inference



1. THAWING OUT THE DIRT.



2. DIGGING AND DUMPING.

fact that the ground is frozen solid about all the year, and even in summer thaws only a few inches. This makes it necessary to thaw the ground artificially, and this is done by "burning."

Fires are built on the surface and the ground thawed a little ways. This is then dug out; another fire is built



A SLUICE BOX.

in the hole, and this process is continued until bedrock is reached. Then fires are built against the side of the shaft, and drifts and tunnels are thawed out.

All the dirt thus taken out is piled outside until the stream opens in the spring. Then the sluice boxes are set up and the winter's diggings washed out. Thus a miner is enabled to keep busy about all the year.

This method of burning out a shaft and tunnels is by no means new, for it has been carried on for many years in the basins of the Amoor and Lena Rivers in Siberia, where the conditions are very similar to those in the Klondike region.

Placer mining in Alaska differs from placer mining in warmer climates only in that the dirt has to be thawed out, and that water for washing can be obtained there only a month or two in each year.

And even when bedrock is reached it is in many cases filled with cracks and seams which are rich in gold and well worth the digging out. As to the value of explosives in this frozen soil authorities differ. The Mining and Scientific Press said recently that they can be used effectively, while the Mining and Engineering Journal, in speaking of the Siberian mines, where the conditions are similar, says their effect is simply to mat the ground together harder. For this same reason, says the latter journal, the ground cannot be dug with a pick and shovel until thawed out.

Lumber, by the way, in the Klondike country, fit for sluice boxes, costs from \$130 to \$150 a thousand feet. So far most of the gold found in

from other regions where placer gold has been found in large quantities, it is reasonable to expect that in the Yukon country rich gold lodes will be found.

And this brings us to the subject of quartz mining in Alaska, for the gold-bearing region up there is by no means confined to the Klondike country. According to the recently published hand-book on "Klondike," written by L. A. Coolidge, of Washington, there are in southeastern Alaska gold mines which have been worked for the past twelve years, and which in 1895 added over \$2,000,000 to the gold surplus of the world. Of this mining region Juneau is the centre, and its discovery is shared by Richard Harris and Joseph Juneau. In 1880 these two men started out from Sitka—it was in the summer—and in August discovered gold in a stream which they named Gold Creek. Later they explored this stream to its source in a mountain valley, which they named Silver Bow Basin. Then a town site was established at the mouth of Gold Creek, which was at first named Harrisburg. Later it was changed to Rockwell and then to Juneau, which name it still holds. This last christening took place in 1881.

The next year both placer and quartz mines were discovered on Douglas Island, about four miles from Juneau. These are now the famous Treadwell mines, having been bought by John Treadwell in 1884, and, says Mr. Coolidge, "from these enough ore has been taken out to pay the purchase money of Alaska and more." The ore of these mines average only from \$2.50 to \$3 a ton, but owing to the enormous scale on which they are worked and the low cost of extracting the ore there is a large profit in working them. All around Juneau and, for that matter, all along the Alaskan coast, gold-bearing quartz is found, and in many places is being profitably worked.

There seems to be little doubt among mining experts that extensive quartz mines will be located in this Yukon country before long. This will mean the introduction into that country of all sorts of improved mining machinery, rock drills, stamp mills and so on. Just what method will be employed to extract the ore from the rock will depend on what kind of ore is found. It may only have to be crushed, and separated by mercury. It may be refractory ore and have to go through some one of the various processes now in use for separating such ore.



MINER TESTING GRAVEL.

Thine own friend and thy father's friend forsake not.